

On page 1, between lines 4 and 5 please insert the heading --TECHNICAL FIELD OF THE INVENTION--.

Please replace the paragraph beginning on page 1, line 7, with the following rewritten paragraph:

A2 --The invention relates to a method of exchanging information and, in particular, to a method of exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network.--

On page 1, between lines 6 and 7 please insert the heading --BACKGROUND OF THE INVENTION--.

Please replace the paragraph beginning on page 1, line 12, with the following rewritten paragraph:

A3 --A network constellation known as, for example, "EWS goes Internet" by Siemens AG, Hofmannstr. 51, D-81359 Munich, published in 1997 under item number A50001-N2-P65-2-7600, figure on page 7, is used as a basis.--

Please replace the paragraph beginning on page 1, line 18, with the following rewritten paragraph:

A4 --A circuit-switched network includes at least one digital originating exchange (local exchange 2) and at least one digital destination exchange (local exchange 1) which are in each case connected directly or indirectly via at least one digital transit exchange to an access node (POP) or in which the functions of such an access node are integrated. Such access nodes enable the originating, destination and/or transit exchanges to be connected to a packet-switched network, for example to the Internet. Subscribers of the circuit-switched network, the terminal

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facilities of which are connected to a digital exchange (originating or destination exchange, respectively) can thus set up a call connection to another subscriber of the circuit-switched network via the packet-switched network, for example by means of Voice over IP.--

Please replace the paragraph beginning on page 1, line 35, with the following rewritten paragraph:

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--The advantage of Voice-over-IP telephony mainly lies in that, by compressing the voice into data packets, approximately eight or more Voice-over-IP call connections can now be simultaneously transmitted via one useful channel for a call connection of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s. This reduces the costs of a network operator so that the network operator can offer favorable telephone charges to the subscribers using a Voice-over-IP call connection. On the other hand, the subscribers to the Voice-over-IP call connections have to accept a reduced voice quality compared with the conventional circuit-switched call connection.--

Please replace the paragraph beginning on page 3, line 5, with the following rewritten paragraph:

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--This procedure represents a disadvantageous solution because the aforementioned VOI functions must be developed in addition to the signaling, billing and traffic control functions already present in a digital originating, destination or transit exchange within such an access node. This solution thus requires intensive development, is expensive and requires dual maintenance. In addition, there is at present no standardized signaling method of VOI call connections which is binding for all network operators.--

On page 3, between lines 14 and 15 please insert the following paragraphs:

--SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network. The method includes, for example, a digital originating exchange and a digital destination exchange which are coupled via a digital transit exchange to an access node which forms an access to the packet-switched network for the circuit-switched network, in which the signaling and useful information belonging to the call connection can be transmitted via the packet-switched network between such access node in the form of data packets, wherein the signaling information is exchanged between the originating and destination exchanges, instead of via the packet-switched network, via a signaling network coupled to the circuit-switched network.

In one aspect of the invention, the useful information to be transmitted via the packet-switched network, and its associated signaling information to be conducted via the signaling network, are provided with a common, unambiguous identification number.

In another aspect of the invention, the billing method of the circuit-switched network is applied to the call connection established via the packet-switched network by means of the signalling information conducted via the signalling network.

In still another aspect of the invention, a direct connection exists between the access node belonging to the originating exchange and another access node belonging to the destination exchange or between the originating exchange and the destination exchange, in which the functions of the access node are integrated, a traffic control function present in the originating or transit exchange is applied to the traffic control function of the useful information, belonging to the call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.

In yet another aspect of the invention, the digital destination exchange is coupled to a device functioning as an access node instead of the access node.

DETAILED DESCRIPTION OF THE DRAWINGS

Figure 1 shows a network constellation according to the invention.

BRIEF DESCRIPTION OF THE INVENTION--

On page 3, please delete lines 15-22.

Please replace the paragraph beginning on page 3, line 23, with the following rewritten paragraph:

--The invention relates to signaling information belonging to a call connection (e.g. VOI) to be transmitted via a packet-switched network. The signaling information is exchanged via a signaling network, instead of via the packet-switched network, which is connected to the conventional circuit-switched network, between an originating and destination exchange of the circuit-switched network.--

Please replace the paragraph beginning on page 3, line 31, with the following rewritten paragraph:

--The signaling function for setting up and clearing down a connection, and for implementing telephone services (e.g. automatic call back), are already implemented in the digital exchanges, i.e. in the originating, destination and transit exchanges. In addition, the conventional circuit-switched network has a standardized independent signaling network, preferably CCS7. According to the invention, the signaling network available for the

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circuit-switched network is advantageously utilized for exchanging signaling information with respect to the call connections to be transmitted via the packet-switched network.--

Please replace the paragraph beginning on page 3, line 11, with the following rewritten paragraph:

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--Using their technique, expensive development of a special signaling function for call connections via the packet-switched network, for example via the Internet, are dispensed. Furthermore, the signaling function in an exchange of a circuit-switched network is already standardized so that signaling information can be exchanged between exchanges of different network operators or manufacturers.--

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Please replace the paragraph beginning on page 4, line 19, with the following rewritten paragraph:

--An additional advantage of the invention is that the traffic of signaling information, which normally puts a great load on the packet-switched network, is shifted to the signaling network connected to the circuit-switched network and, as a result, the packet-switched network is relieved of the load.--

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Please replace the paragraph beginning on page 4, line 26 with the following rewritten paragraph:

--The useful information to be transmitted via the packet-switched network, and its associated signaling functions to be conducted via the signaling network, are provided with a common, unambiguous identification number. As a result, signaling information transmitted via the signaling network can be associated in a simple manner in the exchange with the useful information transmitted via the packet-switched network.--

Please replace the paragraph beginning on page 5, line 1 with the following rewritten paragraph:

--By means of such signaling information conducted via the signaling network, the billing method of the circuit-switched network can also be applied to such a call connection established via the packet-switched network. In this manner, the charging for call connections via the circuit-switched network and for such call connections set up via the packet-switched network can be unified and the administrative expenditure can thus be reduced. In addition, the billing method of the circuit-switched network has a high degree of security (e.g. the prevention of charge losses) which automatically also applies in the billing of call connections via the packet-switched network according to the present embodiment according to the invention.--

Please replace the paragraph beginning on page 5 of line 17 with the following rewritten paragraph:

--The invention is also advantageous when there is a direct connection between the access nodes belonging to an originating exchange and a further access node belonging to a destination exchange or, alternatively, between the originating exchange and the destination exchange, in which the functions of such an access node are integrated (i.e., the data packets of a call connection to be transmitted via the packet-switched network are transmitted between two exchanges without intermediate nodes within the packet-switched network). In this case, the traffic control function present in the originating exchange can also be used for traffic control of the useful information, belonging to a call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.--

Please delete on page 5, lines 34-36.

Please delete on page 6, lines 1-3.

Please replace the paragraph beginning on page 6 of line 4 with the following rewritten paragraph:

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--Terminal facilities A-Tln, for example a telephone set of a subscriber of a circuit-switched network, are connected to a digital exchange VST1 hereinafter referred to as an originating exchange. In the originating exchange, switching functions VT1 such as signaling, billing and traffic control are implemented. Furthermore, a so-called interworking unit IWU1 is integrated in the originating exchange, in which voice is converted into voice in the form of data packets of variable or fixed lengths via a useful channel of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s.--

Please replace the paragraph beginning on page 6 of line 17 with the following rewritten paragraph:

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--This correspondingly applies to a digital exchange VST2, hereinafter referred to as a destination exchange. The terminal facilities, connected to the exchange VST2, of another subscriber of the circuit-switched network are identified by B-TLN and the switching functions implemented in the VST2 are identified by VT2 and the interworking unit is identified by IWU2.--

Please replace the paragraph beginning on page 6 of line 25 with the following rewritten paragraph:

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--Between the originating exchange VST1 and the destination exchange VST2, a number of connections are indicated. On the one hand, the originating and destination exchange are connected via a signaling network SN (e.g. CCS7). On the other hand, a number of useful channels or lines for useful information, e.g. p1, p2 and p3 originate at the originating exchange. In Figure 1, the useful channel or, respectively, the line p1 lead into a packet-switched network IN, for example the Internet or an ATM (Asynchronous Transfer Mode) network which is

indicated in the form of a cloud and nodes contained therein, e.g. in the form of network computers, with the aid of interconnected circles, and leads from there to the destination exchange VST2. The useful channel or line designated by p2represents a direction connection between the originating exchange and the destination exchange. A connection can be established to the destination exchange with the aid of the useful channel or the line p3 via a further digital exchange VST3 which handles the tasks of a transit exchange. A transit exchange normally has no subscriber lines and is connected between two exchanges having subscriber lines. In addition, the transit exchange is connected to the signaling network.--

Please replace the paragraph beginning on page 7 of line 14 with the following rewritten paragraph:

--Assuming party A wishes to set up a packet-switched call connection, e.g. Voice over IP or voice over ATM, with his terminal facility, e.g. A-Tln, to party B with the terminal facility e.g. B-Tln.--

Please replace the paragraph beginning on page 7 of line 18 with the following rewritten paragraph:

--To initialize a call setup, party A uses a terminal facility, e.g. A-Tln, to trigger a loop closure and dials the number (e.g. E.164) of party B. The signaling function implemented in the switching functions VT1 then transmits signaling information, e.g. in CCS7 format, with respect to the call setup request via the signaling network in the direction of the destination exchange addressed with the dialed number, e.g. VST2. The signaling information belonging to the desired call connection is provided with an unambiguous identification number which is preferably entered in the data section of the signaling information present, for example, in CCS7 format. The destination exchange sends a ring tone to a terminal facility, for example B-Tln of party B. Party B accepts the call. The destination exchange VST2 is informed of this and the signaling

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function implemented in the switching functions VT2 sends corresponding signaling information back to the originating exchange via the signaling network.--

Please replace the paragraph beginning on page 8 of line 8 with the following rewritten paragraph:

--In the simplest case, the traffic control function implemented in the switching function selects the useful channel or, respectively line e.g. p2, which leads directly to the destination exchange VST2 via the interworking unit IWU1, by means of the dialed number. The interworking unit is responsible for the conversion of voice via a useful channel of the circuit-switched network with a transmission rate of, for example, 64 kbit/s into voice in the form of data packets. Furthermore, these data packets are provided with the same identification number as their associated signaled information in order to ensure correct correlation between the signaling information and the useful information transmitted via useful channels or lines. The voice which has arrived at the destination exchange in the form of data packets, is converted back into voice via a useful channel of the circuit-switched network by means of the interworking unit IWU2 and transmitted in the direction of the terminal facility of party B with the aid of the switching function VT2.--

On page 10, line 1, please replace "Patent Claims" with --WHAT IS CLAIMED IS--.